T06280 T665660

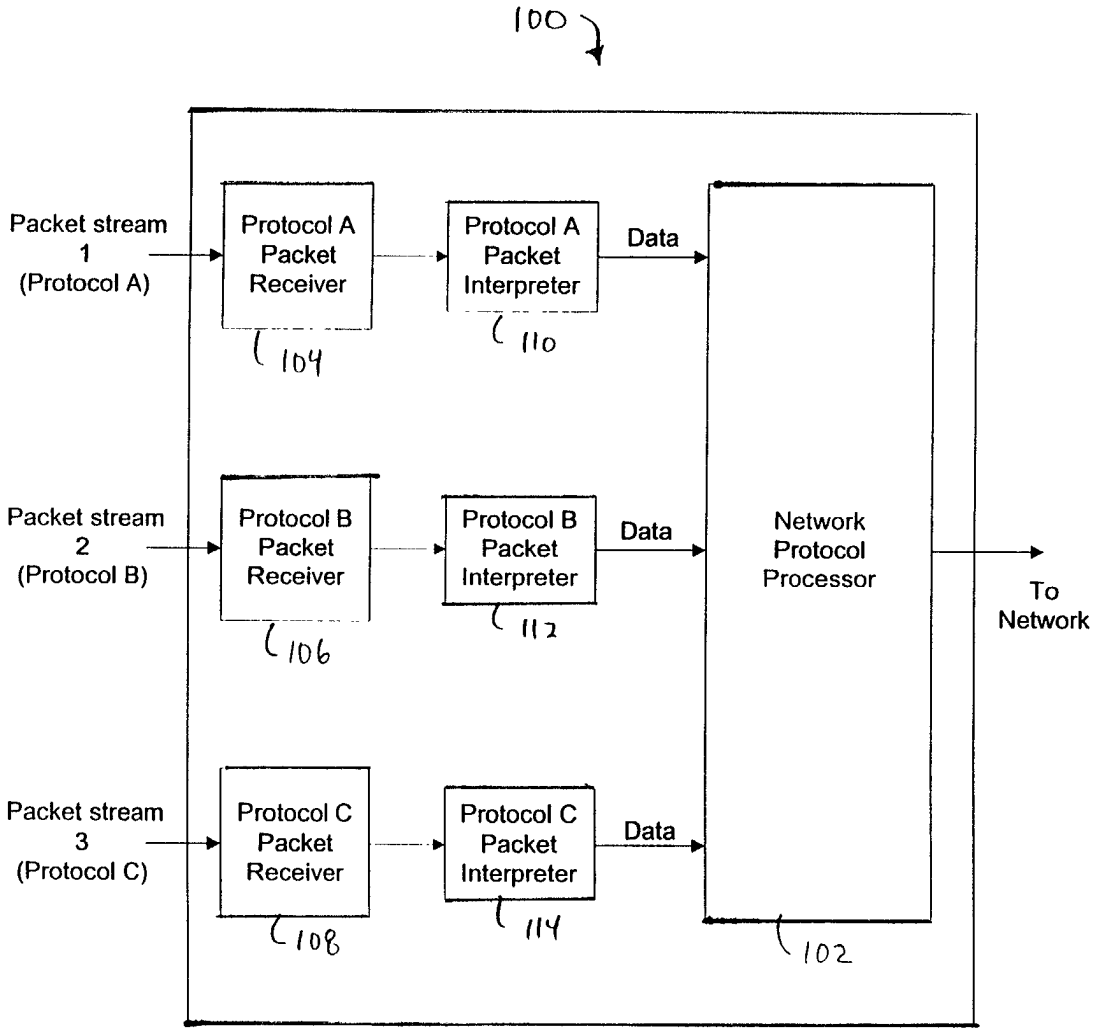

FIG. 1

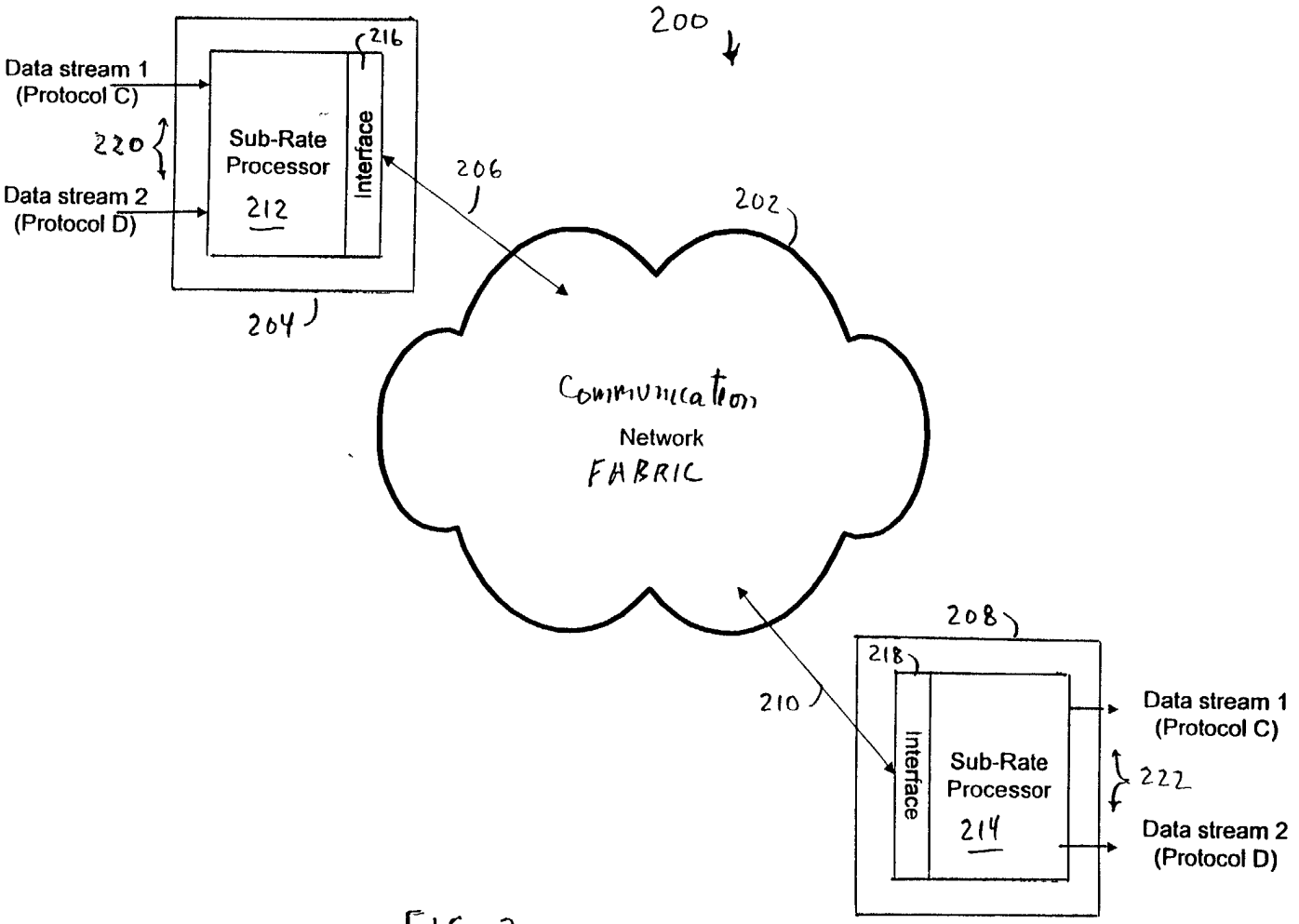
200
216
Data stream 1
(Protocol C)
220
Data stream 2
(Protocol D)
Sub-Rate
Processor
212
Interface
206
202
204
Communication
Network
FABRIC
208
218
210
Interface
Sub-Rate
Processor
214
222
Data stream 1
(Protocol C)
Data stream 2
(Protocol D)

FIG. 2

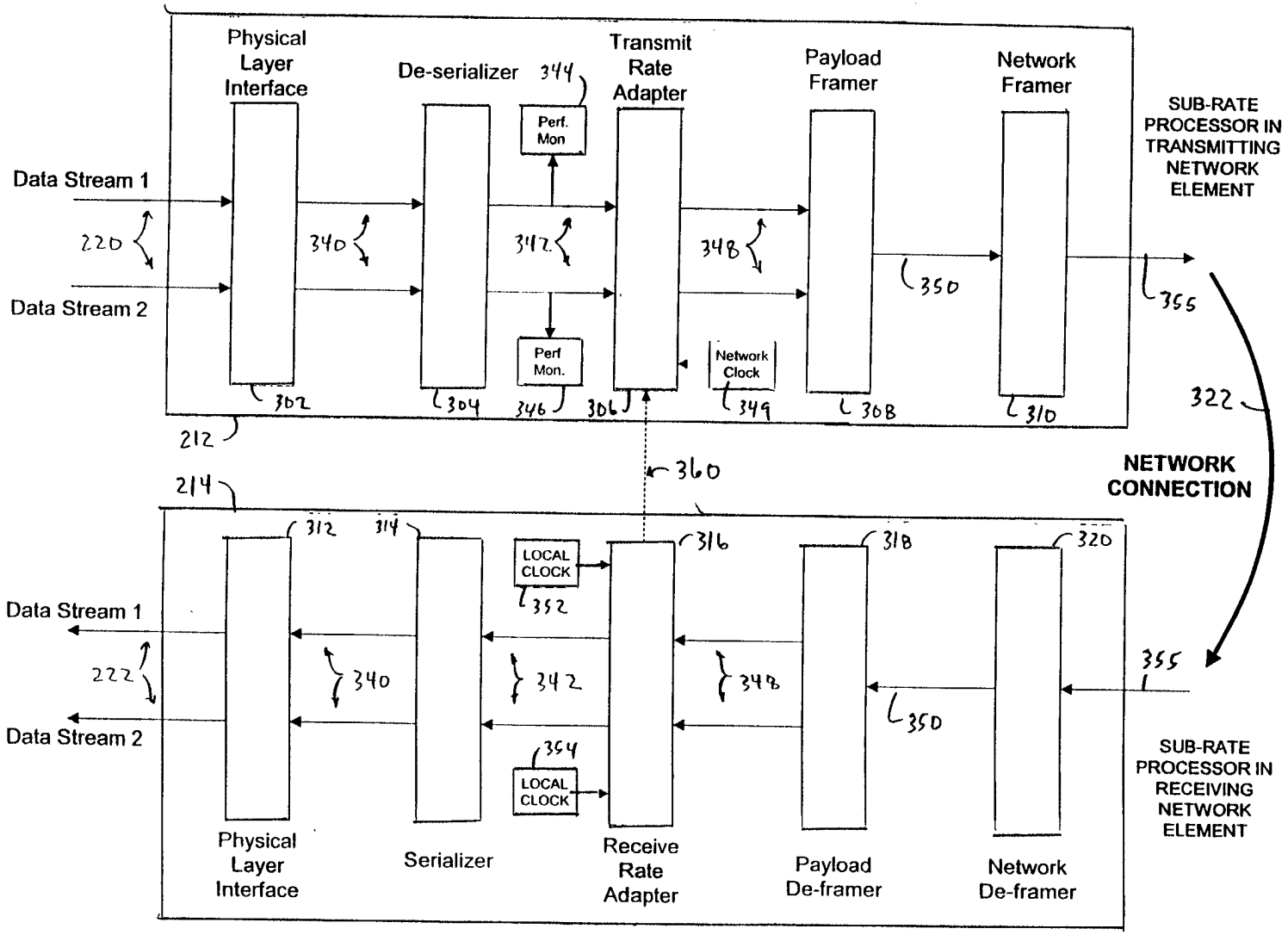
Physical Layer Interface
De-serializer
344
Transmit Rate Adapter
Payload Framer
Network Framer
SUB-RATE PROCESSOR IN TRANSMITTING NETWORK ELEMENT
Data Stream 1
220
Data Stream 2
340
342
348
350
355
Perf. Mon
Perf Mon.
Network Clock
302
304
346
306
349
308
310
212
322
360
NETWORK CONNECTION
214
312
314
316
318
320
LOCAL CLOCK
352
Data Stream 1
222
Data Stream 2
340
342
348
350
355
354
LOCAL CLOCK
SUB-RATE PROCESSOR IN RECEIVING NETWORK ELEMENT
Physical Layer Interface
Serializer
Receive Rate Adapter
Payload De-framer
Network De-framer

FIG. 3

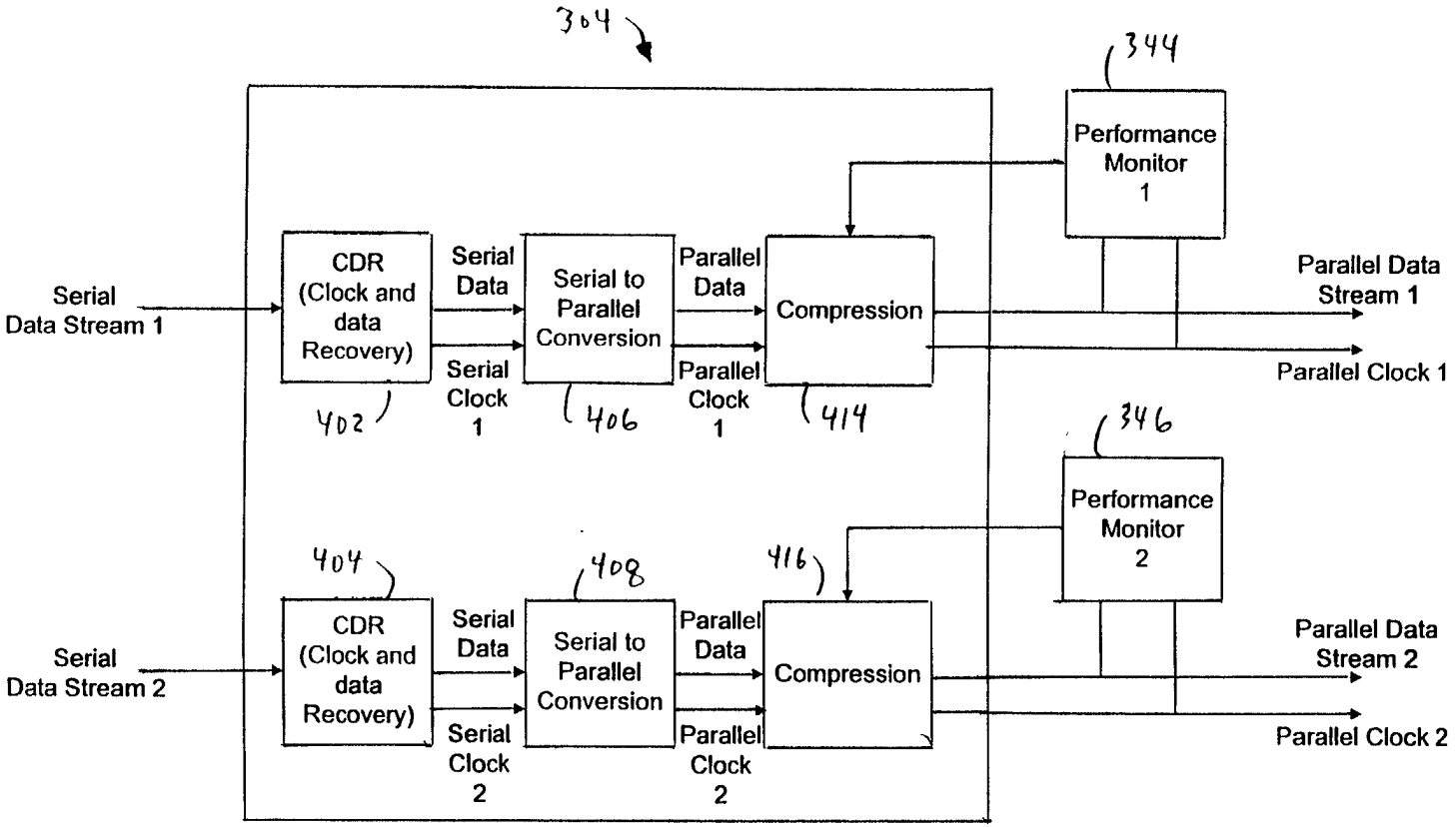
304
344
Performance Monitor 1
Serial Data Stream 1
CDR (Clock and data Recovery)
Serial Data
Serial to Parallel Conversion
Parallel Data
Compression
Parallel Data Stream 1
Parallel Clock 1
Serial Clock 1
Parallel Clock 1
402
406
414
346
Performance Monitor 2
404
408
416
Serial Data Stream 2
CDR (Clock and data Recovery)
Serial Data
Serial to Parallel Conversion
Parallel Data
Compression
Parallel Data Stream 2
Parallel Clock 2
Serial Clock 2
Parallel Clock 2

FIG. 4

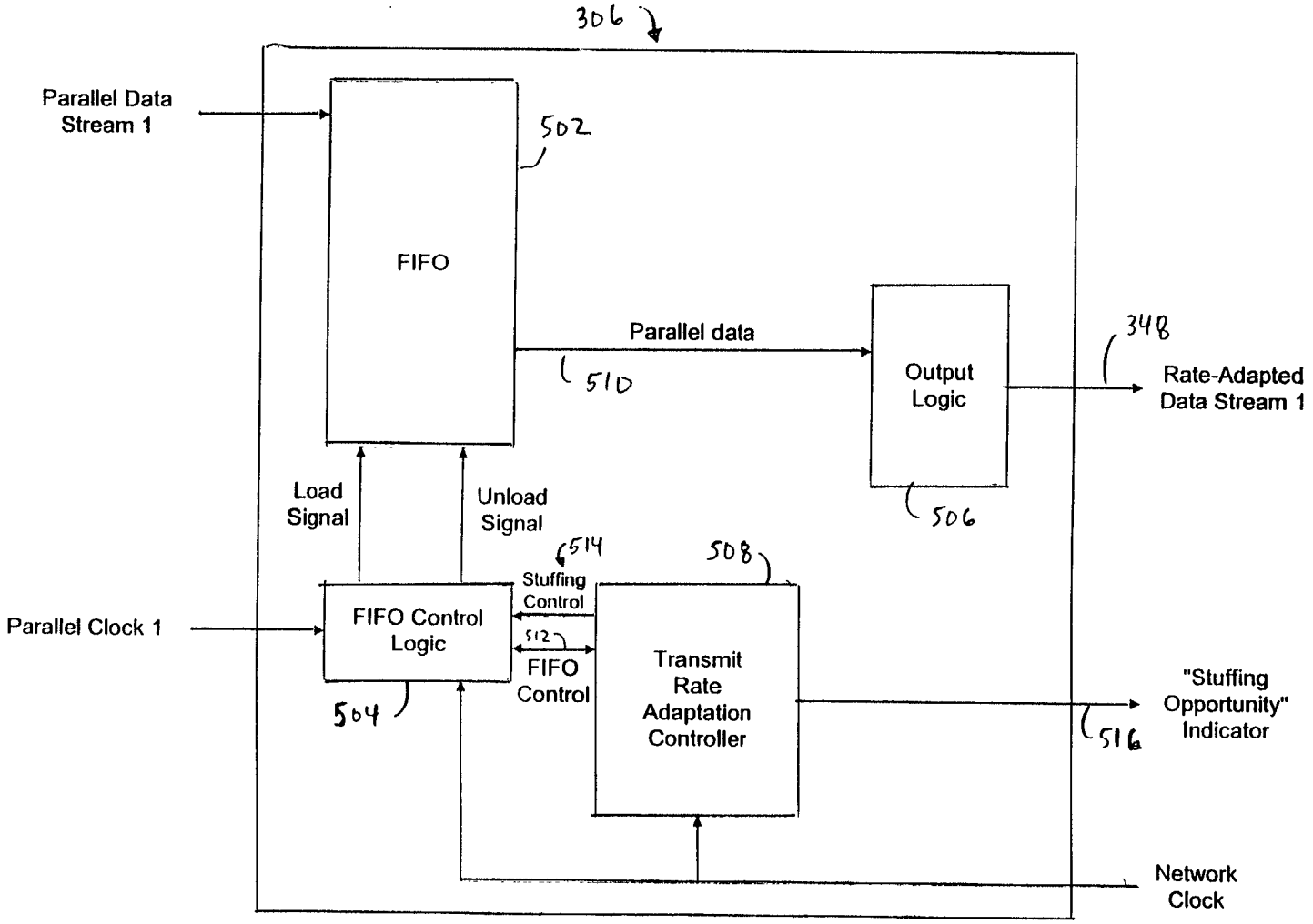
306
Parallel Data Stream 1
502
FIFO
Parallel data
510
Output Logic
348
Rate-Adapted Data Stream 1
506
Load Signal
Unload Signal
514
508
Stuffing Control
512
FIFO Control
Parallel Clock 1
FIFO Control Logic
504
Transmit Rate Adaptation Controller
"Stuffing Opportunity" Indicator
516
Network Clock

FIG. 5

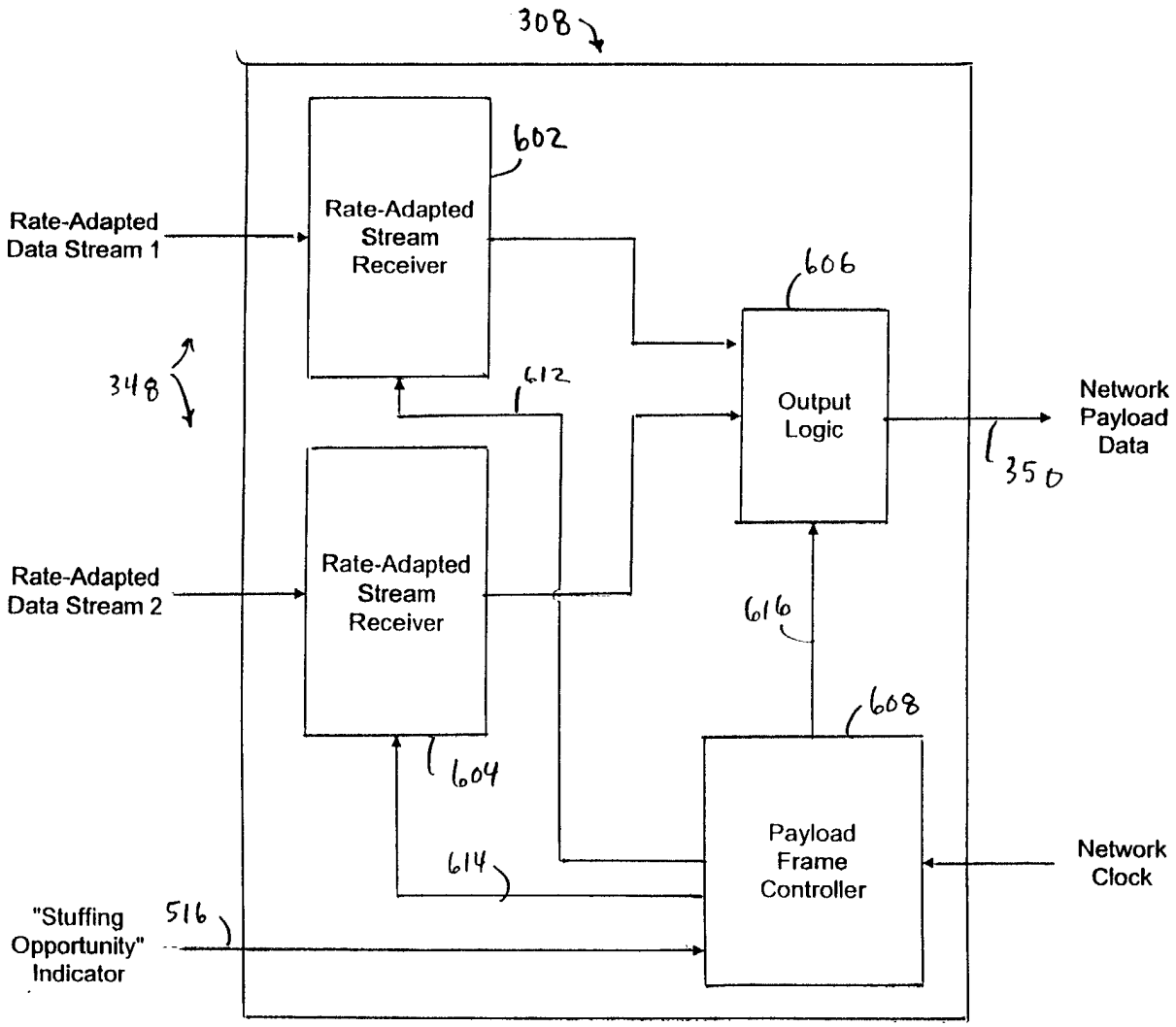
308
602
Rate-Adapted Stream Receiver
Rate-Adapted Data Stream 1
606
348
612
Output Logic
Network Payload Data
350
Rate-Adapted Stream Receiver
Rate-Adapted Data Stream 2
616
608
604
Payload Frame Controller
Network Clock
614
"Stuffing Opportunity" Indicator
516

FIG. 6

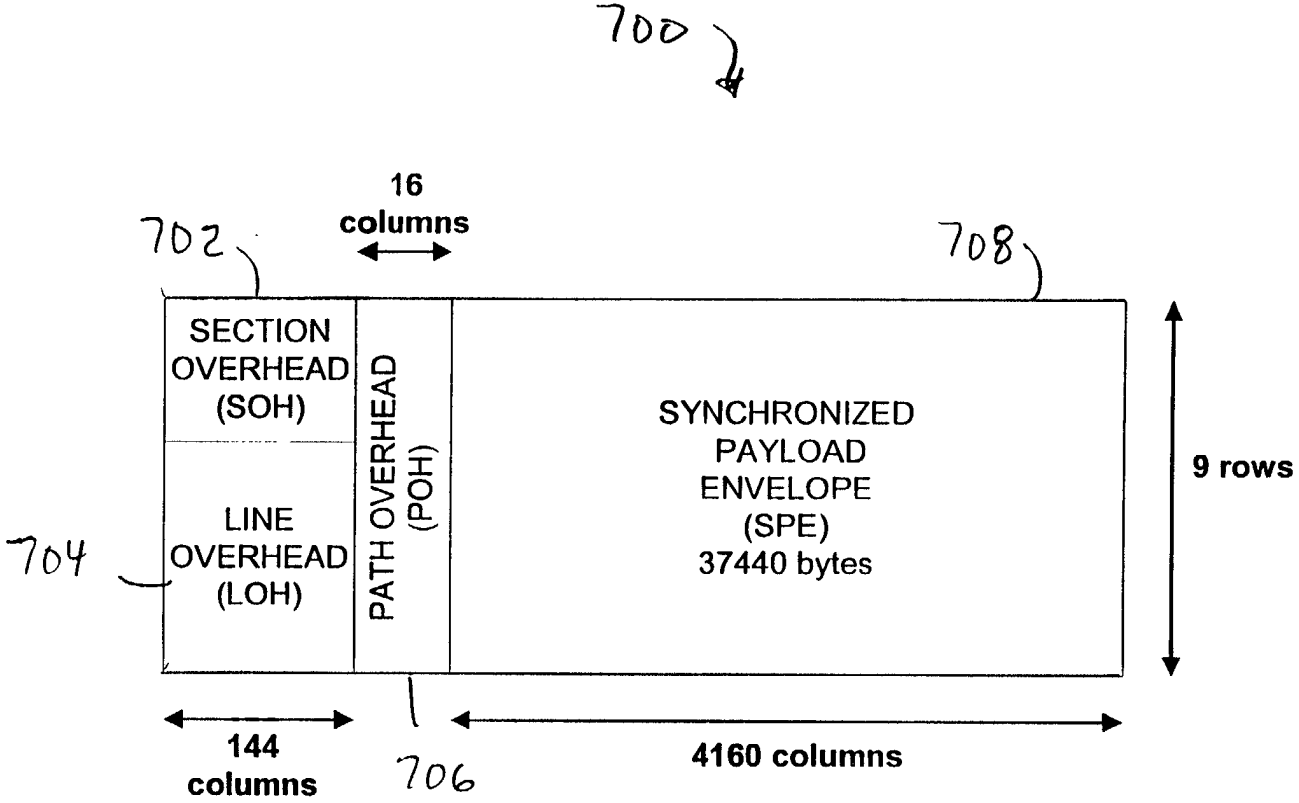
700
16
columns
702
708
SECTION
OVERHEAD
(SOH)
LINE
OVERHEAD
(LOH)
704
PATH OVERHEAD
(POH)
SYNCHRONIZED
PAYLOAD
ENVELOPE
(SPE)
37440 bytes
9 rows
144
columns
706
4160 columns

FIG. 7

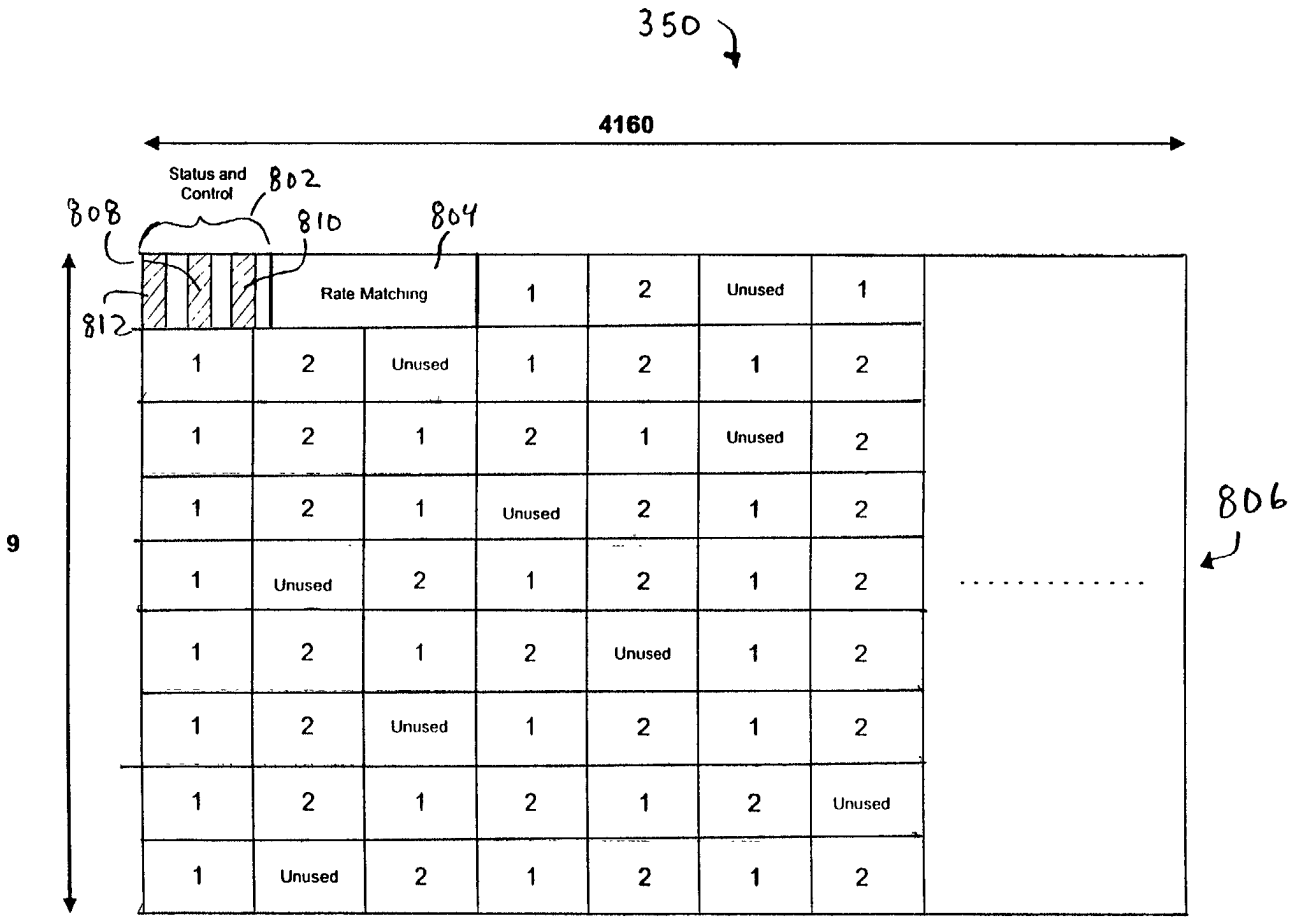
350
4160
Status and Control
802
808
810
804
Rate Matching
812
1
2
Unused
9
806

FIG. 8

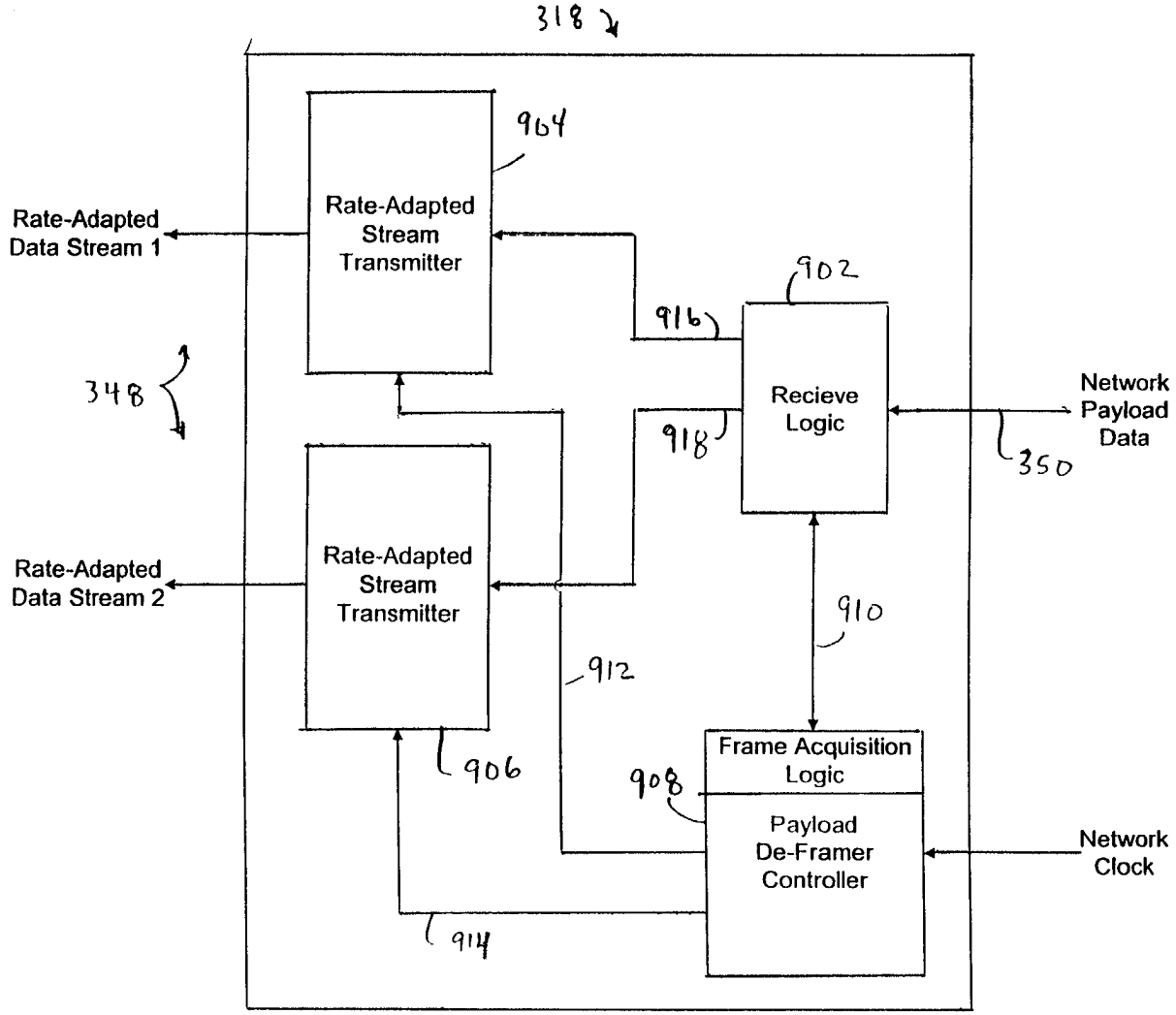
318
964
Rate-Adapted Stream Transmitter
Rate-Adapted Data Stream 1
902
916
Recieve Logic
Network Payload Data
350
348
918
Rate-Adapted Stream Transmitter
Rate-Adapted Data Stream 2
910
912
906
Frame Acquisition Logic
908
Payload De-Framer Controller
Network Clock
914

FIG. 9

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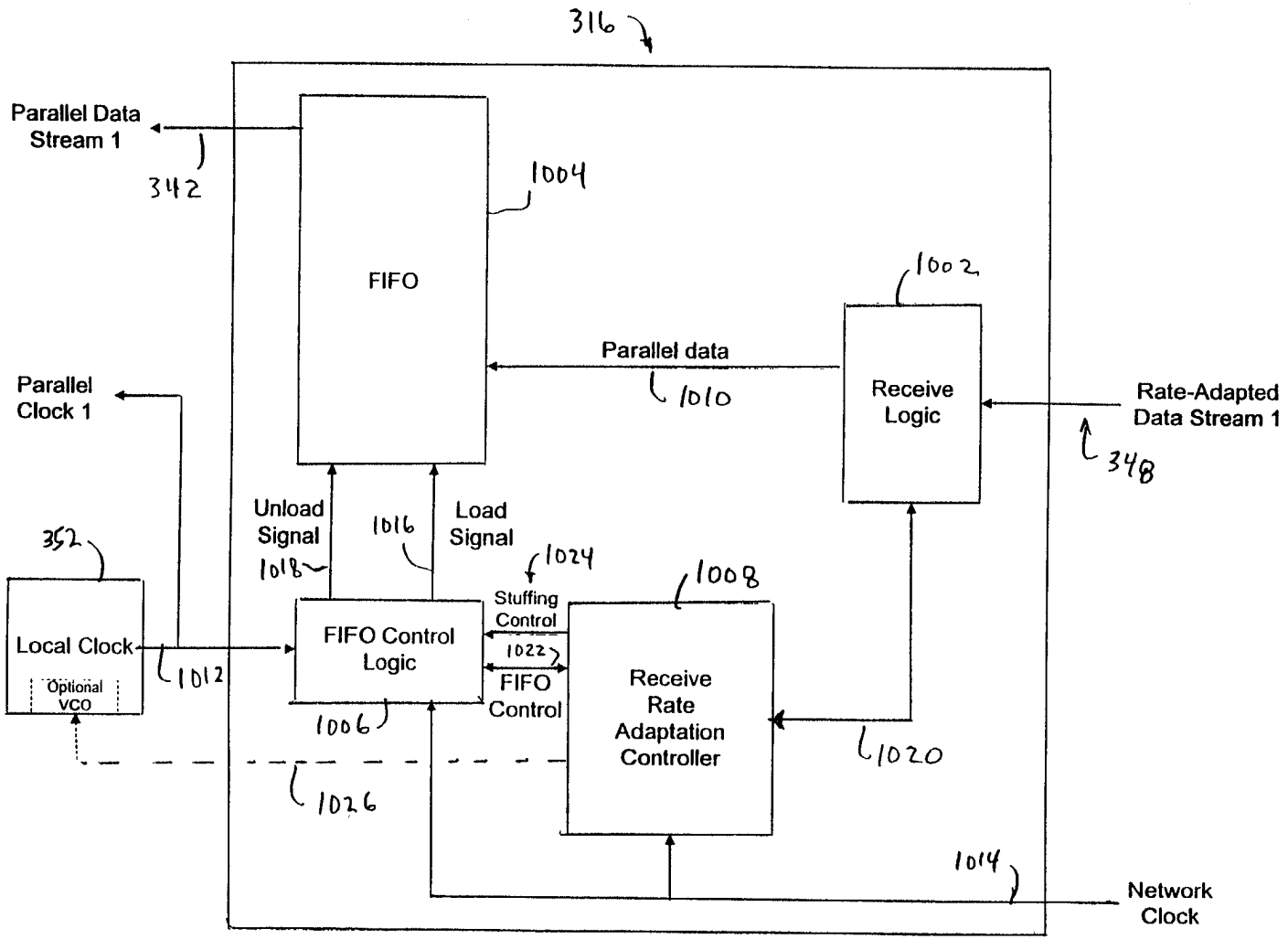

FIG. 10

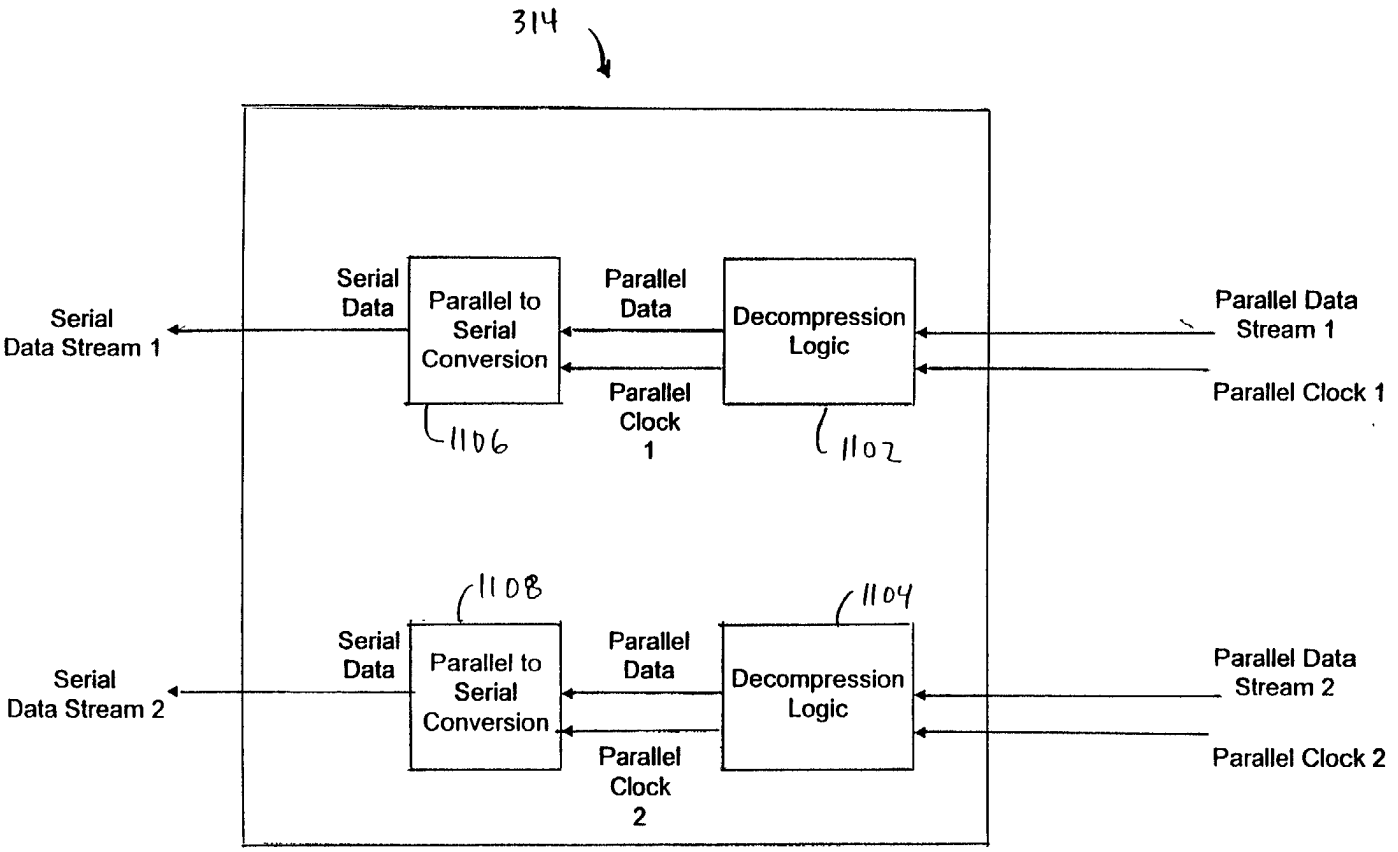
314
Serial Data Stream 1
Serial Data
Parallel to Serial Conversion
Parallel Data
Decompression Logic
Parallel Data Stream 1
Parallel Clock 1
Parallel Clock 1
1106
1102
1108
1104
Serial Data Stream 2
Serial Data
Parallel to Serial Conversion
Parallel Data
Decompression Logic
Parallel Data Stream 2
Parallel Clock 2
Parallel Clock 2

FIG. 11